

# Managing Rehabilitation of Failing Bridge Associated With Horizontally Impacted Canine With Implants in A Geriatric Patient: A Case Report

Dr. Gaurav Gupta<sup>1</sup>

Private Practitioner<sup>1</sup>, Department of Pedodontics & Preventive Dentistry, Jaipur, Rajasthan

## Abstract

When impacted maxillary canines are not manageable by orthodontic traction or reimplantation, available option left is extraction, followed by implant placement, which is a challenge due to the bone resorption occur due to complex tooth extraction and which often requires bone grafting. Immediate dental implant placement appears to be the adequate strategy to replace missing teeth. The aim of this case report is to evaluate the implant placement immediately after removal of maxillary canine impacted.

**Keywords:** Maxillary impacted canine; Immediate implant; Immediate placement

**How to cite this Article:** Gupta G. Managing Rehabilitation of Failing Bridge Associated With Horizontally Impacted Canine With Implants in A Geriatric Patient: A Case Report. HTAJOCD. 2019

## Introduction

The surgical-orthodontic treatment of impacted maxillary canine (IMC) is still a challenging situation for clinicians. Therapy of IMC involves the exposure of the retained canine, its traction in the arch and the alignment and levelling with orthodontic equipment. Bone loss, root resorption and gingival recession around IMC are some of the most common complications. Therapies of IMC are generally very long and complicated, so alternative methods have been studied to restore the missing canine. IMC can be defined as the infraosseous position of the tooth after the expected time of eruption, whereas the anomalous infraosseous position of the canine before the expected time of eruption can be defined as a displacement. Most of the time, palatal displacement of the maxillary canine results in IMC. [1]

IMC is a common finding of oral pathology and represents 2% of patients seeking orthodontic treatment. IMC is one of the most frequently impacted teeth, second only to third molars with the prevalence ranging from 0.8 to 5.2% depending on the population examined. The incidence of IMC is more than twice than that in the mandible, and the ratio of palatal to buccal impaction is 8 to 1.8% of IMC is bilateral and it is twice more common in girls than boys. Some of the primary etiological causes of IMC are space deficiency, retention of primary canine/ premature root closure/disturbances in tooth eruption sequence, trauma, rotation of tooth buds and localized pathological lesions (cysts, odontomas). [2]

Currently placement of an implant immediately after tooth extraction is a common procedure [3,4]. Some recent clinical systematic reviews have indicated it as a very promising approach in selected cases [5,6], including immediate loading of post-extraction implants placed in infected sites [7]. The main advantage being the reduction in surgery and treatment time [6]. In the case of a impacted maxillary canine tooth, the possibility of immediate implant placement after extraction depends on the presence of adequate residual apical bone because it allows the implant to be positioned and anchored bicortically which helps in achieving good primary stability [8]. Within the

literature have reported cases of implants installed after the removal of a retained canine with 1- to 8-year follow-up [9]. However, there are no studies of systematic reviews or similar. The aim of this case report is to evaluate the implant placement immediately after removal of maxillary canine impacted.

## Case Report

A 80 year old female patient came with complain of failing bridge in upper right side quadrant. (Figure. 1) All the pontics have decayed therefore extraction followed by implant retained fixed prosthesis for rehabilitation was advised to the patient.

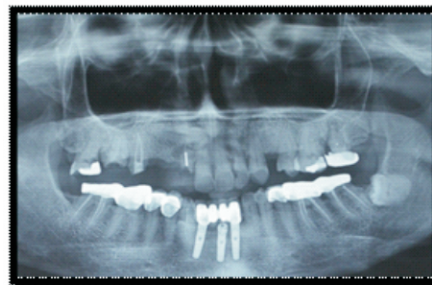


Figure. 1 - Pre-operative image of patient

But there was a horizontally impacted canine placed in maxilla in that region. Hence CBCT was done to find if we can strategically place implants bypassing the canine or not. But result ruled out that possibility. (Figure. 2)

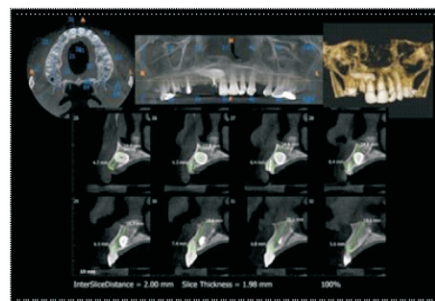


Figure.2 - CBCT of patient

As a result, transalveolar extraction of impacted canine was carried out with a minimal invasive approach possible so that speedy healing can facilitate early implant placement after surgery. (Figure. 3 a, b)

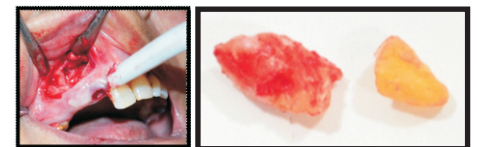


Figure. 3a,b - Extraction of impacted canine

After a month of surgical extraction and result of new CBCT (Figure. 4) allowed for strategic placement of implants and a good primary stability was achieved. (Figure. 5)

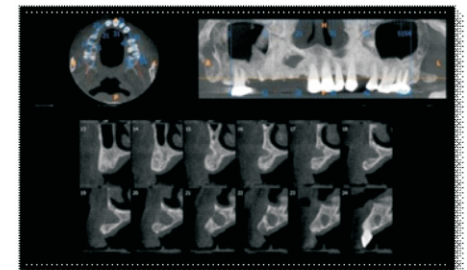
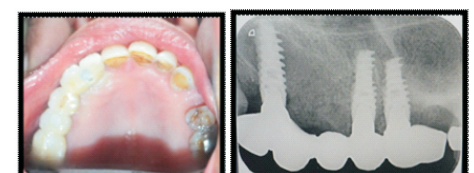


Figure.4 - CBCT after the extraction



Figure.5 - Implant placement

After 3 months, ISQ of all the implants were obtained with Ostell ISQ meter, which came out to be biologically well stable. Following this, implant level impressions were made and screw retained crowns were delivered. (Figure. 6)



**Gupta; Managing Rehabilitation of Failing Bridge Associated With Horizontally Impacted Canine With Implants in A Geriatric Patient: A Case Report**

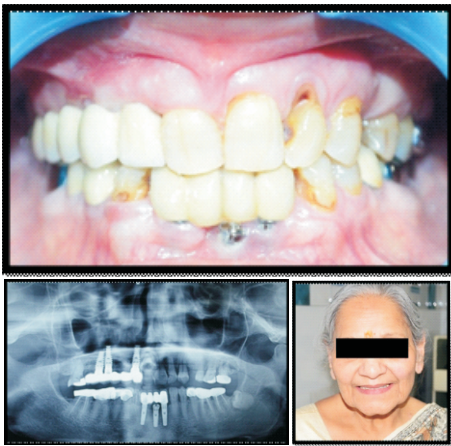


Figure. 6a-e - Final prosthesis

If this impacted canine had been orthodontically or surgically intervened at young age, the complications with the patient had been very less.

**Discussion**

The clinical management of impacted canine can be challenging and frustrating [10]. When patients are unwilling to accept orthodontic treatment and/or the impacted canines are in a high position precluding orthodontic traction, the treatment of choice is extraction [11].

Mazor, et al. [12] suggested a alternative of installing an implant immediately after the removal of the impacted maxillary canine. The procedure based on the application of the immediate post-extraction implants, which is a procedure that has been widely documented and has a success rate similar to implants in healed site's placement [3-7].

Anitua, et al. [7], recently reported that it can be performed Immediate implant placement into infected sockets in association with immediate loading. With an average follow-up of 6 years (range 1 to 8 years) and 65% of the implants had a followup time > 5 years. No implant failure occurred with the success rate 93%.

In the same way, Lang, et al. [13], report to the mean survival of the post-extraction implants with immediate loading has been 98.4% (after 2 years of follow-up) and has decreased to 97.5% with a range of 95.2 to 98.8% (after \_\_\_ 3 years follow-up). The publications analyzed in this review are prospective studies, case series and case report, which result in 100% success in all treated cases (53 implants). These installed immediately after the removal of the impacted maxillary canine, both palatal and labial.

So implant placement might be considered a valid alternative for IMC treatment. In fact implant dentistry has reached success rate of above 80%, but peri-implantitis is the most important delayed complication (14-23). Factor which are favorable for onset of disease are oral biofilm formation (poor oral hygiene), host defence capability (smoking habit, excessive alcohol consumption, genetic traits, history of peri-odontitis, use of bisphosphonates). These

factors might favour developing of peri-implantitis and periodontal disease, which diagnosis and treatment require dentist's engagement (24-29).

This new surgical procedure for IMC treatment has been created new interfaces with the implants: implant-periodontal ligament, implant- cement, implant-dentine, and an implant-pulp and implant-enamel interfaces (30). Since this surgical approach is new, long-term data involve only a limited number of patients and implants. Further studies are needed to validate this procedure.

**Conclusion**

This treatment is viable and with a good outcome, although more works is needed to determine adequate the results and thus determine the potential impact of this treatment alternative.

**References**

1. Davarpahah M, Szmukler-Moncler S. Unconventional implant placement. 2: placement of implants through impacted teeth. Three case reports. *Int J Periodontics Restorative Dent.* 2009;29(4):405-13.
2. Falcón GB. Immediate Implant Post-Extraction of Impacted Maxillary Canine: Systematic Review. *J Dental Sci* 2017, 2(2):6
3. Al-Sabbagh M, Kutkut A (2015) Immediate implant placement: surgical techniques for prevention and management of complications. *Dent Clin North Am* 59(1): 73-95.
4. Falcón GBE (2015) Cargainmediatafuncionalen la zona estéticasobre un implante post extracción. *Rev Mex Periodontol* 6(1): 5-9.
5. Atieh MA, Duncan WJ, Faggion CM (2016) Quality assessment of systematic reviews on oral implants placed immediately into fresh extraction sockets. *Int J Oral Maxillofac Implants* 31(2): 338-351.
6. Chranovic BR, Albrektsson T, Wennerberg A (2015) Dental implants inserted in fresh extraction sockets versus healed sites: a systematic review and metaanalysis. *J Dent* 43(1): 16-41.
7. Anitua E, Piñas L, Alkhraisat MH (2016) Long-Term outcomes of immediate implant placement into infected sockets in association with immediate loading: A Retrospective cohort study. *J Periodontol* 87(10):1135-1140.
8. Peñarrocha M, Peñarrocha M, García-Mira B, Larrazabal C (2007) Extraction of impacted maxillary canine with simultaneous implant placement. *J Oral Maxillofac Surg* 65(11): 2336-2339.
9. Mithridade D, Serge SM, Keyvan D, Nedjoua CO, Georgy D, et al. (2015) Unconventional implant placement IV. Implant placement through impacted teeth to avoid invasive surgery. Long-term results of 3 Cases. *Open Dent J*: 15-20.
10. Alberto PL (2007) Management of the impacted canine and second molar. *Oral Maxillofac Surg Clin North Am* 19(1): 59-68.
11. Cardaropoli D, Debernardi C, Cardaropoli G (2007) Immediate placement of implant into impacted maxillary canine extraction socket. *Int J PeriodontRestorat Dent* 27(1): 71-77.
12. Mazor Z, Peleg M, Redlich M (1999) Immediate placement of implants in extraction sites of maxillary impacted canines. *J Am Dent Assoc* 130(12): 1767-1770.
13. Lang NP, Pun L, Lau KY, Li KY, Wong MC (2012) A systematic review on survival and success rates of implants placed immediately into fresh extraction sockets after at least 1 year. *Clin Oral Implants Res* 5: 39-66.
14. Brunelli G, Carinci F, Zollino I, Candotto V, Scarano A, Lauritano D. Peri-implantitis. A case report and literature review. *European Journal of Inflammation.* 2012;10(1 S2):1-5.
15. Scapoli L, Girardi A, Palmieri A, Martinelli M, Cura F, Lauritano D, Carinci F. Quantitative Analysis of Periodontal Pathogens in Periodontitis and Gingivitis. *J Biol RegulHomeost Agents.* 2015;29(3 Suppl 1):101- 10.
16. Lauritano D, Martinelli M, Mucchi D, Palmieri A, Muzio

- LL, Carinci F. Bacterial load of periodontal pathogens among Italian patients with chronic peri- odontitis: A comparative study of three different areas. *Journal of Biological Regulators and Homeostatic Agents.* 2016;30(2):149-54.
17. Lauritano D, Cura F, Candotto V, Gaudio RM, Mucchi D, Carinci F. Periodontal Pockets as a Reservoir of Helicobacter Pylori Causing Relapse of Gastric Ulcer: A Review of the Literature. *J Biol RegulHomeost Agents.* 2015;29(3 Suppl 1):123-6.
18. Lauritano D, Muzio LLO, Gaudio RM, Russo LLO, Mucchi D, Nardi GM, Scapoli L. The ecological catastrophe of oral diseases: A possible link between periodontitis and protozoa. *Journal of Biological Regulators and Homeostatic Agents.* 2016;30(2):143-47.
19. Lauritano D, Muzio LL, Gaudio RM, Russo LL, Mucchi D, Nardi GM, Martinelli M. Why should patients with systemic disease and tobacco smokers go to the dentist? *Journal of Biological Regulators and Homeostatic Agents.* 2016;30(2):135-41.
20. Scapoli L, Girardi A, Palmieri A, Martinelli M, Cura F, Lauritano D, Pezzetti F, Carinci F. Interleukin-6 Gene Polymorphism Modulates the Risk of Periodontal Diseases. *J Biol RegulHomeost Agents.* 2015;29(3 Suppl 1):111-6.
21. Lauritano D, Scapoli L, Mucchi D, Cura F, Muzio LLO, Carinci F. Infectogenomics: Lack of association between vdr, il6, il10 polymorphisms and "red Com - plex" bacterial load in a group of Italian adults with chronic periodontal disease. *Journal of Biological Regulators and Homeostatic Agents.* 2016;30(2):155-60.
22. Lauritano D, Pazzi D, Iapichino A, Gaudio RM, Di Muzio M, Lo Russo L, Pezzetti F. Evaluation of the efficacy of a new oral gel containing carvacrol and thymol for home oral care in the management of chronic periodontitis using PCR analysis: a microbiological pilot study. *J Biol RegulHomeost Agents.* 2016;30(2 Suppl 1):129-34.
23. Lauritano D, Bignozzi CA, Pazzi D, Palmieri A, Gaudio RM, Di Muzio M, Carinci F. Evaluation of the efficacy of a new oral gel as an adjunct to home oral hygiene in the management of chronic periodontitis. A microbiological study using PCR analysis. *Journal of Biological Regulators and Homeostatic Agents.* 2016;30(2):123-28.
24. Lauritano D, Cura F, Candotto V, Gaudio RM, Mucchi D, Carinci F. Evaluation of the Efficacy of Titanium Dioxide with Monovalent Silver Ions Covalently Linked (Tiab) as an Adjunct to Scaling and Root Plan- ing in the Management of Chronic Periodontitis Using Per Analysis: A Microbiological Study. *J Biol RegulHomeost Agents.* 2015;29(3 Suppl 1):127-30.
25. Lauritano D, Cura F, Gaudio RM, Pezzetti F, AndreasiBassi M, Carinci F. Polymerase Chain Reaction to Evaluate the Efficacy of Silica Dioxide Colloidal Solutions in the Treatment of Chronic Periodontitis: A Case Control Study. *J Biol RegulHomeost Agents.* 2015;29(3 Suppl 1):131-5.
26. Lauritano D, Bignozzi CA, Pazzi D, Cura F, Carinci F. Efficacy of a new coating of implantabutmentconnections in reducing bacterial loading: An in vitro study. *ORAL and Implantology.* 2017;10(1):1-10.
27. Carinci F, Girardi A, Palmieri A, Martinelli M, Scapoli L, Avantaggiato A, Nardi GM, Lauritano D. Lab-test 1: periimplantitis and bacteriological test. *European Journal of Inflammation.* 2012;10:91-94.
28. Carinci F, Girardi A, Palmieri A, Martinelli M, Scapoli L, Avantaggiato A, Nardi GM, Lauritano D. Lab-test 2: microflora and periodontal disease. *European Journal of Inflammation.* 2012;10(1):95-98.
29. Carinci F, Girardi A, Palmieri A, Martinelli M, Scapoli L, Avantaggiato A, Nardi GM, Lauritano D. Lab-test 3: genetic susceptibility in periodontal disease. *European Journal of Inflammation.* 2012;10(1):99-102.
30. Yavuz MS, Aras MH, Buyukkurt MC, Tozoglu S. Impacted mandibular canines. *J Contemp Dent Pract.* 2007;8(7):78-85.